

What is claimed is:

1. A gastrointestinal stimulation device comprising:

5 a fixation device comprising a radially expandable member; an outer portion; and

at least one electrode coupled to the outer portion of the fixation device,

10 wherein the radially expandable member is configured to fix the fixation device within a portion of the gastrointestinal tract so that the at least one electrode is in electrical contact with the gastrointestinal tract.

2. The gastric stimulation device of claim 1 wherein the

15 radially expandable member comprises a self-expanding member having a first compressed position and a second radially expanded position.

3. The gastric stimulation device of claim 1 wherein the

20 fixation device comprises an electrode housing defining the outer portion of the fixation device, wherein the at least one electrode is located on the electrode housing so that at least a portion of the at least one electrode is exposed.

4. The gastric stimulation device of claim 3 wherein the

25 electrode housing comprises a connector configured to couple the electrodes to an electronic circuit configured to provide electrical stimulation to the gastrointestinal tract through the electrodes.

30 5. The gastric stimulation device of claim 3 further comprising:

an attachment device coupled to the housing and configured to attach the housing to the stomach wall.

6. The gastric stimulation device of claim 3 wherein the electrode housing further comprises an electronic circuit configured to provide electrical stimulation to the  
5 gastrointestinal tract through the at least one electrode.

7. The gastric stimulation device of claim 6 further comprising a coupler configured to removably couple a power source to the electronic circuit.

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8. The gastric stimulation device of claim 7 wherein the coupler comprises a docking mechanism configured to removably couple the power source adjacent the electrode housing.

15 9. The gastric stimulation device of claim 8 wherein the docking mechanism comprises a magnetic coupling mechanism.

10. The gastric stimulation device of claim 1 further comprising an electronics housing including electronic  
20 circuitry, wherein the electronics housing comprises an electrical connector coupling the electronic circuitry to the at least one electrode, wherein the electronic circuitry is configured to deliver electrical stimulation through the at least one electrode.

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11. The gastric stimulation device of claim 10 further comprising a coupling mechanism for removably coupling the electrical connector of the electronics housing to the at least one electrode of the electrode housing.

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12. The gastric stimulation device of claim 11 wherein the electronics housing further comprises a power source for providing power to the electronic circuitry.

13. A gastrointestinal stimulation device comprising:  
a fixation device comprising at least one electrode  
coupled to the fixation device, wherein the fixation device is  
5 configured to be positioned within a portion of an intestinal  
tract so that the at least one electrode is in electrical  
contact with the intestinal tract;

an electronic housing configured to be positioned in the  
stomach; and

10 at least one lead electrically coupled to the at least  
one electrode and configured to extend from the fixation  
device in the intestinal tract into the stomach and to be  
coupled to the electronics housing;

wherein the electronics housing comprises electronics  
15 unit configured to supply electrical stimulation pulses  
through the lead to the at least one electrode.

14. The gastrointestinal stimulation device of claim 13  
further comprising:

20 an attachment device coupled to the housing and  
configured to attach the housing to the stomach wall.

15. A method for controlling a contraction of a pylorus  
comprising the steps of:

25 providing a stimulator comprising:

a fixation device;

at least one electrode coupled to the fixation  
device; and

30 electronic circuitry coupled to the at least one  
electrode and configured to deliver electrical  
stimulation through the at least one electrode;

positioning the fixation device in the duodenum of a  
patient so that the at least one stimulating electrode is in

electrical contact with the wall of the duodenum;

providing stimulation pulses from the electronic circuitry to the duodenum through the at least one electrode and thereby affecting the contraction of the pylorus.

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16. The method of claim 15 wherein the step of providing a fixation device comprises providing a radially expandable member wherein the fixation device has an outer area with the at least one electrode coupled to the outer area of the fixation device,

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fixing the fixation device with the radially expandable member within a portion of the gastrointestinal tract so that the electrode is in electrical contact with the gastrointestinal tract.

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17. A method for treating obesity comprising the steps of:  
providing electrical stimulation to the duodenum of a patient to control the contraction of the pylorus.

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18. The method of claim 17 wherein the step of providing electrical stimulation comprises providing the stimulation for a predetermined period of time.

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19. The method of claim 18 wherein the predetermined period of time is a predetermined time after ingestion of a meal.

20. The method of claim 18 further comprising the steps of sensing ingestion of food into the stomach prior to providing stimulation.

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21. The method of claim 17 further comprising the steps of:  
providing a stimulator comprising:  
a fixation device;

at least one electrode coupled to the fixation device; and

electronic circuitry coupled to the at least one electrode and configured to deliver electrical stimulation through the at least one electrode;  
5 positioning the fixation device in the duodenum of a patient so that the at least one stimulating electrode is in electrical contact with the wall of the duodenum; and  
providing stimulation pulses from the electronic  
10 circuitry to the duodenum through the at least one electrode and thereby affecting the contraction of the pylorus.

22. The method of claim 21 wherein the step of providing the fixation device comprises providing a radially expandable  
15 member wherein the fixation device has an outer portion with the at least one electrode coupled to the outer portion of the fixation device,

fixing the fixation device with the radially expandable member within a portion of the gastrointestinal tract so that  
20 the electrode is in electrical contact with the gastrointestinal tract.